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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,272	07/23/2003	Kazuya Tsujimichi	628365009035	8414
<div>7590 Stephen D. Scanlon North Point 901 Lakeside Avenue Cleveland, OH 44114</div>			<div>EXAMINER JOHNSON, EDWARD M</div>	
			<div>ART UNIT 1754</div>	<div>PAPER NUMBER</div>
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/22/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/625,272

Applicant(s)

TSUJIMICHI ET AL.

Examiner

Edward M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 53-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 53-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 53-54, 56-58, 60, and 66 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Komatsu et al. US 5,854,708.

Regarding claim 53, Komatsu '708 discloses an anti-fog method comprising contacting air with a material comprising a glass substrate and a photocatalyst film (see abstract and column 2, lines 25-32) wherein the film comprises inorganic oxides such as  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$  and has a hydrophilic property (see column 2, lines 33-35) and  $\text{TiO}_2$ , which is excited by light. The method of Komatsu would inherently clean air because Komatsu discloses that  $\text{NO}_x$  in the air is deposited in the openings of the disclosed composition and dissolved and removed (column 2,

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lines 25-32), which would clean air by removing NOx therefrom, as disclosed.

When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicant to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. In re Fitzgerald et al. 205 USPQ 594.

Regarding claims 54, 59, Komatsu '708 discloses the same thickness amount of titanium oxide and inorganic oxide (see column 4, lines 50-55), which would result in  $a/(a+b)$  value of 0.5.

Regarding claim 56, Komatsu '708 discloses ZnO and ZnS (see column 2, lines 40-41), silver and copper (Example 2).

Regarding claims 57-58 and 66, Komatsu '708 discloses Cr and Al (see Examples).

Regarding claim 60, Komatsu '708 discloses a 2000 angstrom film thickness (see column 2, lines 65-67).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 55, 59, 61-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu '708.

Regarding claim 55, Komatsu fails to disclose particles having a diameter of 0.005 to 0.5 microns.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use particles having a diameter of 0.005 to 0.5 microns in the photocatalyst of Komatsu because Komatsu discloses a film thickness of about 1000 angstroms, which would motivate an ordinarily skilled artisan to use particles of about that diameter to create a film of particles having the disclosed thickness.

Regarding claim 59, Komatsu discloses an embodiment comprising titania of 2000 angstrom thickness and inorganic oxide film of 150 angstroms, which would motivate an ordinary artisan to use an optimum ratio of titania and Al including 0.00001-0.05 arrived at through routine experimentation.

Regarding claims 61-64, Komatsu '708 discloses a film of  $\text{SiO}_2$ , which is Applicant's preferred binder, on rectangular substrates (see Figures), which would motivate an ordinary

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artisan to form a glaze or paint on a tile to make the film to be exposed to light, as disclosed.

Regarding claim 65, Komatsu '708 discloses a glass substrate, which would at least suggest calcium silicate glass to an artisan of ordinary skill.

***Response to Arguments***

5. Applicant's arguments filed 12/20/06 have been fully considered but they are not persuasive.

It is argued that Komatsu discloses an anti-fog element on a substrate. This is not persuasive because Komatsu discloses the film comprises inorganic oxides such as  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$  and has a hydrophilic property (see column 2, lines 33-35) and  $\text{TiO}_2$ , which is excited by light and also because Applicant does not claim a "triple-layer structure". Rather, Applicant merely claims a substrate and a surface layer, which reads on the disclosed prior art glass substrate and photocatalytic film. It is noted that the features upon which applicant relies (i.e., a "triple-layer structure") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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It is argued that not only does Komatsu fail... third component metal oxide. This is not persuasive because Komatsu discloses  $\text{TiO}_2$ , which is excited by light.

It is argued that additionally, in some examples... the rear surface of the glass substrate. This is not persuasive because Applicant's claim does not specify a substrate having a layer that is not on the "rear" side thereof. It is noted that the features upon which applicant relies (i.e., a layer that is specifically not on the "rear" side of the substrate) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

#### **Conclusion**

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would



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like assistance from a USPTO Customer Service Representative or  
access to the automated information system, call 800-786-9199  
(IN USA OR CANADA) or 571-272-1000.



Edward M. Johnson  
Primary Examiner  
Art Unit 1754

EMJ